ATTACHMENT 1

COMMENTS ON CHAPTER IV OF THE DRAFT SECOND REPORT TO CONGRESS ON SOLID WASTES FROM PROCESSING OF SELECTED ORES AND MINERALS: APPLICABLE FEDERAL AND STATE REGULATIONS (14 December 1987)

Submitted by

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22 February 1988

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INTRODUCTION

RCRA Sections 8002(f) and (p) require EPA to prepare a "detailed and comprehensive" Report to Congress on mineral processing wastes, including analysis of applicable laws and regulations. Chapter IV of the December 14 draft Report prepared by ICF, Inc. attempts to respond to this Congressional directive, but is neither an adequate response nor a useful aid in determining whether additional regulation of processing wastes is warranted.

Although the ICF draft considers several scenarios for subtitle C regulation of processing wastes, it does not provide an adequate description of the requirements that such regulation would impose. The draft's discussion of currently applicable laws and regulations omits important federal authorities and describes others inaccurately. The discussion of current state regulatory programs is even more cursory. Nor does the draft discuss EPA's legal obligations under RCRA Section 1006 and Executive Order 12612 to avoid duplication of existing federal requirements and defer to state regulation when possible.

The cumulative effect of these deficiencies is a draft Report creating the impression that there are substantial gaps in current regulation of processing wastes, and that subtitle

C regulation would pose only minimal compliance problems for existing facilities. However, the effects of subtitle C regulation cannot be determined unless all subtitle C requirements are considered, and the impression that current regulation may be incomplete is inaccurate with respect to Kennecott Utah Copper facilities. Kennecott facilities are subject to comprehensive regulation under a state statute governing operation and reclamation of mining facilities. In addition to this statute, Table 1 lists seven other state or federal laws that may be applied to the company's facilities for managing smelting and refining wastes identified as potentially hazardous in the ICF draft Report.[1/] Some of these wastes also will be subject to the subtitle D mining waste regulations that EPA currently is developing.[2/] The existing

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1/ At Kennecott Utah Copper operations, all smelter and refinery wastes identified as potentially hazardous in the draft Report eventually are sent to either a surface impoundment for WWTP sludge or the company's 5600-acre tailings pond. Acid plant blowdown, refinery bleed electrolyte and other adverse smelter and refinery waters are treated in a WWTP, which discharges sludge to the sludge pond and treated water to the tailings pond. The treated water eventually is recirculated through the company's concentrators. The company's smelter does not produce any waste as slag, because all smelter slag is recycled directly or reconcentrated and returned to the smelter. Tailings from slag concentration are deposited with other tailings on the tailings pond.

2/ This includes tailings and may also include WWTP sludge, as the company presently is considering plans for treatment of the sludge and subsequent disposal on the tailings pond or leach dumps.

TABLE 1.
EXISTING STATE AND FEDERAL LAWS THAT MAY BE APPLIED
TO KENNECOTT UTAH COPPER SMELTER
AND REFINERY WASTES

Federal Solid Waste Disposal Act

Utah Solid and Hazardous Waste Act

Federal Clean Water Act

Utah Water Pollution Control Act

Federal Clean Air Act

Utah Air Conservation Act

Utah Mined Land Reclamation Act

Federal Comprehensive Environmental Response, Compensation and Liability Act

TABLE 2.
REGULATORY REQUIREMENTS THAT MAY BE APPLIED
TO KENNECOTT UTAH COPPER SMELTER AND REFINERY WASTES
UNDER EXISTING LAWS[1]

Statutory Authority[2]	Permitting	New Source Review	Emergencies	Records/ Reports	Safety/ Administration	Ground water Monitoring	Ground water Control	Corrective Action	Surface Water Control	Air Emissions Control	Closure/ Post Closure	Financial Responsibility
Federal Solid Waste (6-8)		X	X	X	X	X	X	X	X	X	X	
State Solid Waste[3] (28-30)	X	X	X	X	X	X	X	X	X	X	X	X
Federal Air (11-13)	X	X	X	X						X		
State Air (25-28)	X	X	X	X						X		
Federal Water (10-11)	X	X		X					X			
State Water (20-25)	X	X	X	X	X	X	X	X	X		X	
State Mining (13-20)	X	X		X	X		X	X	X	X	X	X
CERCLA (8-10)			X	X		X	X	X	X	X	X	X

[1]For purposes of comparison, the listed regulatory requirements were taken from the current Federal Subtitle C regulations. This table is not meant to suggest that current requirements are exactly the same as those imposed under Subtitle C, but only that existing laws impose requirements comparable to those contained in the Subtitle C regulations.
[2]Page numbers in parenthesis reference detailed discussions presented below for each of these statutes.
[3]Mining and mineral processing wastes currently are exempt from the Utah hazardous and solid waste regulations, but the state statute permits the State Solid and Hazardous Waste Committee to subject these wastes to such regulations, if necessary.

laws listed in Table 1, and regulations promulgated pursuant to them, subject Kennecott Utah Copper facilities to a full panoply of regulation governing air emissions, discharges to surface and ground water and reclamation of surface resources. As demonstrated in Table 2, under these existing authorities the company's facilities may be subjected to all of the major types of regulatory requirements that were imposed under EPA's subtitle C regulations prior to the 1984 RCRA Amendments.

The comprehensive regulatory authority depicted in Tables 1 and 2 is a far cry from the incomplete and disjointed picture of existing regulatory requirements presented in the draft Report prepared by ICF. As EPA has recently recognized with respect to wastes from oil and gas production, the degree of existing regulation is a critical factor in determining whether subtitle C regulation of particular wastes may be warranted. If the final Report is to be truly "detailed and comprehensive" as RCRA Section 8002 requires, the discussion of applicable laws and regulations in the ICF draft must undergo substantial revision. The following sections describe the various requirements that currently apply to Kennecott Utah Copper facilities and present suggestions for improving the relevant sections of the ICF draft.

I. CURRENT SUBTITLE C REQUIREMENTS

The draft Report considers two alternative scenarios for management of mineral processing wastes under the hazardous

waste requirements of RCRA subtitle C. However, neither the discussion of subtitle C requirements in Chapter 4 nor the discussion of alternative management scenarios in Chapter 6 provides any detailed summary of the requirements that full subtitle C regulation would impose.[1/] At a minimum, the final Report should discuss the following current subtitle C requirements:

> "Mixture" and "derived from" rules. Wastes mixed with or derived from listed hazardous wastes would be regulated as listed hazardous wastes. This could prevent such beneficial practices as reuse of treated wastewater and placement of treated WWTP sludge on tailings ponds or leach dumps. (40 CFR 261).
>
> Land disposal ban. In many cases, the current practice of placing metal-bearing wastes in surface impoundments would be prohibited unless EPA can develop treatment standards for such wastes. This prohibition could be applied even where surface impoundments cause no harm and there is no viable disposal alternative. (§ 3004(d)).
>
> Required technology. Surface impoundments not prohibited would be required, at a minimum, to employ a double liner and leachate collection system. This would require extensive retrofitting or replacement of existing impoundments, even where current facilities provide adequate containment. (§ 3004(o)).

1/ As discussed above in Section III of the Kennecott Utah Copper comments on the ICF draft Report, the draft may also overstate EPA's authority to modify subtitle C requirements for mineral processing wastes.

Groundwater monitoring. Despite installation of required technology, extensive groundwater monitoring would be required around all surface impoundments. If monitoring reveals a significant quantity of any hazardous constituent, monitoring for all Appendix IX constituents would be required even though the vast majority of these are not released from mineral processing operations. (40 CFR 264.98).

Corrective action. If any part of a facility is subject to subtitle C, all solid waste units within the facility may be subject to groundwater monitoring and corrective action requirements, including corrective action beyond facility boundaries. (40 CFR 264.101).

Closure. Upon closure, surface impoundments must either be capped or all contaminated materials must be removed. Extensive post-closure monitoring and other care lasting for at least 30 years may also be required. (40 CFR 264.110-.120, 264.220-.231).

Financial responsibility. Extensive liability insurance would be required regardless of whether it is necessary or available. (40 CFR 264.147).

Administration. A myriad of administrative requirements would be imposed regardless of whether they are duplicative or otherwise unnecessary. These include, among others, standards for security, personnel training, preparedness and prevention, contingency planning and emergency procedures and preparation of numerous records, reports and manifests. (40 CFR 262, 264.10- .18, .30-.37, .50- .56, .70- .78).

II. EXISTING FEDERAL LAWS AND REGULATIONS

A. RCRA Subtitle D.

The ICF draft Report omits nearly all of the essential details of the current federal solid waste management program (pp. 4-8-9). The draft does not mention the possibility that many facilities handling processing wastes at integrated mining, milling and processing operations, such as the Kennecott Utah Copper tailings pond, will also be subject to the subtitle D regulations that EPA currently is developing for mining wastes. Although mineral processing wastes may be subjected to detailed guidelines for land disposal of solid waste (40 CFR 241), no description of these guidelines is provided.[1/] Protections provided by these guidelines include:

1. Site selection and design requirements for new or modified sites (§ 241.202, .203).

2. Protection of water quality, including:

   (a) compliance with federal water quality standards;

   (b) "adequate" protection of drinking water supplies;

1/ EPA's guidelines currently do not apply to "mining wastes," because EPA initially determined in 1974 that there was a "lack of sufficient information on which to base recommended procedures" for mining wastes (40 CFR 241.100(a)). The courts have held that EPA may apply solid waste regulations to mining wastes if necessary. See CMA v. EPA, 673 F.2d 507 (D.C. Cir. 1982).

(c) "appropriate" surface and groundwater monitoring;

(d) "necessary" leachate controls;

(e) flood protection (§ 241.204).

3. Protection of air quality, including dust control and compliance with federal Clean Air Act requirements (§ 241.205).

4. Covering and vegetation upon closure (§ 241.209).

5. Safety and recordkeeping requirements (§ 241.211, .212).

The ICF draft notes that EPA's power to enforce these guidelines currently is limited to withholding of federal funds and expertise, and implies that this enforcement authority may be insufficient. However, the draft does not provide any information on the extent to which this authority has been exercised or how effective it has been. Nor does the draft explain why it may be necessary to revise the previous congressional determination that "federal assistance should be an incentive for state and local authorities to act to solve the discarded materials problem. At this time federal preemption of this problem is undesirable, inefficient and damaging to local initiative."1/

Similarly, the draft Report notes that mineral processing waste facilities are subject to the Act's prohibition on

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1/ H.R. Rep. No. 1491, 94th Cong., 2d Sess. 33 (1976).

"open dumps," but does not describe EPA's criteria for identifying prohibited dumps (40 CFR 257). EPA's criteria include the following relevant protections:

> Floods. Facilities must be operated to prevent "washout of solid waste so as to pose a hazard to human health, wildlife, or land or water resources" (§ 257.3-1).
>
> Surface water. Facilities must comply with NPDES or other applicable permits and with any additional applicable requirements in state water quality management plans (§ 257.3-4).
>
> Ground water. No contamination of underground drinking water sources above specified maximum contaminant levels is permitted beyond facility boundaries (§ 257.3-4).
>
> Air. Open burning is prohibited, and facilities must meet applicable requirements of Clean Air Act state implementation plans (§ 257.3-7).
>
> Safety. Public access must be controlled and other hazards abated as necessary (§ 257.3-7).

The draft should mention that these open dumping requirements are enforceable through citizen suits under RCRA § 7002. The final Report should provide a detailed and comprehensive description of all of these authorities currently available under RCRA subtitle D.

B. Superfund.

Although EPA has publicly stated its intent to rely on Superfund authorities at mining and mineral processing sites, these authorities are not mentioned in the Executive Summary of the ICF draft, nor are they properly described in Chapter

IV of the draft Report. The draft (pp. 4-1, 4-5) focuses on EPA's authority to respond to "substantial threats and imminent hazards" under Superfund, creating the impression that EPA has little authority to respond to releases presenting lesser threats. However, CERCLA Section 104(a) grants EPA authority to respond "whenever any hazardous substance is released or there is a substantial threat of a release into the environment." In such cases, EPA may conduct removal, remedial action or any other necessary response that is consistent with the National Contingency Plan (id.). The final Report should clarify that EPA has Superfund authority to respond to any release, or threatened release, of a hazardous substance from mineral processing waste.

Apart from this point, the draft Report omits mention of many additional Superfund authorities relevant to regulation of mineral processing wastes. At a minimum, the final Report should address the following current Superfund requirements:

> Cleanup standards. Contrary to the draft Report (p. 4-7), SARA does not merely require cleanup to meet "legally applicable" federal or state standards, but also permits EPA or states to apply any other standards deemed "relevant and appropriate" for a particular site, including RCRA hazardous waste requirements. (§121(d)).
>
> Natural resource damages. Contrary to the draft Report, CERCLA Section 107 does not merely provide "for correcting dam-

ages to affected natural resources" (p. 4-6). Rather, the statute permits assessment of up to $50 million in monetary damages for injury to natural resources, over and above response costs. (§ 107(a)(4)(C), (c)(1)(D)).

Investigations. EPA has complete authority to enter facilities and perform such monitoring, sampling, surveys, testing, studies or other investigations as are necessary to facilitate appropriate response. (§ 104(b), (e)).

Reporting. CERCLA imposes detailed requirements for keeping of records on hazardous substances, reporting of facilities at which such substances are handled and reporting of releases of such substances. (§§ 102-03).

Financial responsibility. CERCLA Section 108 authorizes EPA to impose financial responsibility requirements "consistent with the degree and duration of risk associated with the production, transportation, treatment, storage or disposal of hazardous substances."

Enforcement. In addition to the liability provisions of Section 107, various sections of CERCLA provide civil and criminal enforcement authority for all major requirements. SARA also provides EPA with new authority for administrative assessment of civil penalties (§ 109) and provides new authority for citizen suits (§ 159).

C. Clean Water Act.

The draft Report presents a reasonably complete discussion of CWA requirements applicable to discharges from primary copper smelting and refining facilities. However, the draft does not discuss the Act's enforcement authorities, and also

omits mention of the stormwater discharge provisions of the 1987 CWA Amendments. Section 405 of the Amendments added new CWA Section 402(p), which requires EPA to promulgate NPDES permitting regulations for stormwater discharges at smelters, refineries and other industrial sources by 1989. Permit applications must be filed in 1990, and EPA must grant or deny stormwater discharge permits by 1991. Section 401 of the Amendments adds new CWA Section 402(l)(2), which grants mining operations a conditional exemption from the stormwater discharge permitting requirements. At mining operations, permits will not be required for stormwater discharges "composed entirely of flows which are from conveyances or systems of conveyances (including but not limited to pipes, conduits, ditches and channels) used for collecting and conveying precipitation runoff and which are not contaminated by contact with, or do not come into contact with, any overburden, raw material, intermediate products, finished product, by-product or waste products located on the site of such operations."

D. Clean Air Act.

The general discussion of Clean Air Act requirements in the draft Report fails to present any clear picture of the specific air quality control measures that are required at primary copper smelters and refineries. A thorough discussion of these requirements is important, because they are frequently

utilized in solid waste regulations and they have been instrumental in eliminating environmental damage cases that occurred prior to installation of air quality controls and were at least partially attributable to air emissions. Many of these measures, such as smelter emission limitations and requirements for control of tailings pond dust, appear in state regulations and are therefore discussed in comments on state regulatory requirements set forth below. Federal requirements that should be clarified in the draft Report are as follows:

Stack heights. CAA Section 123 prohibits smelters and other sources from using stacks higher than required by "good engineering practice" to meet ambient air quality standards.

Nonferrous smelter orders. CAA Section 119, which allowed extended schedules for compliance with smelter SO2 emission limits, expired at the end of 1987.

Fugitive dust policy. The Report should make it clear that EPA's policy does not apply to areas with "major industrial development" or "significant industrial particulate emissions" (52 Fed. Reg. 24716, July 1, 1987). The relevance of the policy to particulate emissions from smelter or refinery wastes is therefore questionable.

NSPS. The Report should describe the new source performance standards for primary copper smelters (40 CFR 60. 160- .166). The draft's statement that "NSPS are not permit requirements" (p. 4-21) is misleading, because the standards require smelters to install and maintain specific control technology (double contact acid plants).

NESHAPS. Hazardous pollutant emission standards should be discussed separately from the PSD requirement to install BACT (p. 4-20), and the arsenic standard for primary copper smelters should be described in detail (40 CFR 61. 170- .177).

Visibility. CAA § 169A requires existing smelters and refineries to employ "best available retrofit technology" if emissions cause or contribute to impairment of visibility in National Parks or other pristine areas. EPA also is considering a secondary particulate standard for visibility protection (52 Fed. Reg. 24670, July 1, 1987).

New source review. The draft RTC should clarify that all construction of new smelters or refineries, or modification of existing facilities, is governed by precise permitting requirements for PSD or nonattainment areas. These requirements should be described and the differences between them explained.

Enforcement and Emergencies. CAA enforcement authorities should be discussed, including EPA's special authority to respond to emergencies under Section 303.

III. EXISTING STATE LAWS AND REGULATIONS

A. Mining and Reclamation.

The draft Report to Congress points out that 23 states have adopted special regulations for operation and reclamation of nonfuel minerals mining facilities (p. 4-38). However, aside from a brief reference to financial responsibility requirements, the draft offers no description of the detailed requirements for operation and closure frequently found in state mining laws and regulations. The final Report should

provide a comprehensive description of such programs for all states with major mining activity.

The state of Utah has enacted a Mined Land Reclamation Act (Utah Code Ann. § 40-8-1 et seq.) and implementing regulations that impose comprehensive requirements for operation and reclamation of mines and concentrating facilities. This regulatory program does not cover smelting or refining facilities (§ 40-8-4(b)). However, at Kennecott Utah Copper operations, smelting and refining wastes are covered by the mining regulations because these wastes are co-managed with mining wastes (see note 1, p. 2, supra).

Pursuant to the state mining law and regulations, Kennecott filed with the state Division of Oil, Gas and Mining a "Mining and Reclamation Plan" specifying ongoing operational and reclamation requirements for the company's mining operations. This plan covers the tailings pond, sludge pond and WWTP, in addition to other aspects of the company's operations. The state statute and regulations are summarized below, followed by a summary of the Kennecott plan.

1. Utah statute and regulations. The Utah Mined Land Reclamation Act is designed to minimize environmental degradation caused by mining activities, to ensure that mined land is left in a condition compatible with probable future uses and to prevent hazards to public safety (Section 40-8-12). To these ends, operators of mining or concentrating facilities

must file with the Division a "notice of intention" describing their operations and containing a plan for reclamation (Section 40-8-13). The operator must either sign a contract obligating him to comply with the plan or post a bond or other form of security to be forfeited upon failure to comply (Section 40-8-14).

If operations are temporarily suspended for a period expected to run from six months to two years, the operator must notify the Division, unless the suspension is caused by a labor dispute (Section 40-8-21(1)). If operations are terminated or suspended for a period "expected to extend for a period in excess of two years," the operator must furnish the Division with data necessary to evaluate probable future land uses and performance under the reclamation plan (Section 40-8-21(2)). After evaluating this data, the Division must inspect the property and "take whatever action may be appropriate in furtherance of the purposes of this act" (Section 40-8-21(3)).

The Utah Board of Oil, Gas and Mining has promulgated regulations under the Act, including reclamation standards which apply to "all work or activity required to be performed in accordance with reclamation plans" (Rule M-10). The standards include the following requirements:

(1) land must be compatible with probable post-mining uses;

(2) hazards to public safety and welfare must be minimized;

(3) tailings and other ponds must be self-draining unless otherwise approved by a state or federal agency;

(4) waste and other piles must be sloped or terraced to minimize erosion;

(5) highwalls must be backfilled:

(6) toxic materials must be removed or controlled;

(7) roads and pads must be reclaimed or stabilized;

(8) natural channels must be unrestricted and drainage structures and waste must be removed;

(9) surface structures and equipment must be removed;

(10) shafts, portals, trenches and small pits must be covered or closed;

(11) sediment must be controlled;

(12) revegetation must be established where possible;

(13) water impoundments must be stabilized and self-draining;

(14) surface soils must be redistributed to prevent erosion and promote re-vegetation.1/

1/ In 1987, the Utah Board released draft proposed amendments to these mining regulations. Among other things, the proposal contains more detailed requirements for pre-construction review, operation, control of toxic substances and mandatory reclamation practices. The Board anticipates promulgation of final amendments by mid-1988.

2. The Kennecott reclamation plan. On September 28, 1978 Kennecott and the Utah Board made a contract which obligates the company to perform certain ongoing reclamation work. The contract requires the company to file and implement a detailed mining and reclamation plan. Originally, the company provided a corporate guarantee as assurance of financial ability to complete the plan. In succeeding years and for various reasons, the company also has posted various reclamation bonds which currently total $8,126,525. The contract obligates Kennecott Utah Copper to spend at least $50,000 per year for research and development of projects for revegetation or other rehabilitation of company properties. Every year, the company must prepare a report on reclamation work and costs, and a reclamation plan for the following year. Each year's plan must be reviewed and approved by the Board.

The preamble to the Kennecott Mining and Reclamation Plan recognizes that at the company's large scale, long-term operations, many lands cannot be restored to their prior conditions and possible future uses frequently are difficult to determine. However, the preamble confirms "the intention of Kennecott to leave the land in a stable and productive condition consistent with location, possible uses and topography . . ." The preamble also specifies that "Kennecott will maintain a program

of experimentation and will apply the best available technology toward rehabilitating each piece of land as it moves from mining to other uses."

Following the preamble, the Plan specifies reclamation measures required for various areas of company operations upon prolonged or permanent closure. The WWTP, sludge pond and tailings pond are of particular interest here, as these are the facilities that manage the company's smelting and refining wastes. The Plan notes that the tailings pond area formerly consisted of high alkaline, sparsely vegetated lands which were used only for limited grazing before tailings disposal began in 1916. The tailings themselves are considered a resource, and processing of tailings is identified as a possible future use. During current operations, the company must maintain the dikes in a stable condition and with an outside slope of 5:1. Periodic inspections to assure long-term stability are required, as is continual dewatering through buoy-supported siphon lines. The outside slopes of the pond must be revegetated where the surface is permanent. The top of the pond and the perimeter roads must be continuously stabilized to prevent wind erosion. This requirement may be satisfied through a combination of natural moisture and a peripheral watering system. If these measures do not provide effective stabilization, additional treatment with a

stabilizing agent is required by land or, if necessary, by air. Use of fast growing grasses is also being investigated for wind erosion control.[1/]

Upon closure, "the surface of the tailings pond will be stabilized using the most practicable technology available upon the termination of the deposition of the tailing." The tailings pond surface and sides must be totally revegetated and must be graded to provide adequate drainage. Testing to identify the best species and practices for final revegetation currently is underway. Possible future uses include continued mining, farming, recreational, residential, commercial, and industrial use.

As for the WWTP and sludge pond, the Kennecott Plan recognizes that the land now containing them also was formerly used only for very limited grazing. Possible future uses include industrial, commercial and residential use. Upon closure, the WWTP and other surface facilities must be razed and the debris removed. "Sludge ponds, evaporation ponds and possible other areas will likewise be left in a position suitable for conversion to other use determined at that time. This may involve filling or covering with tailing and other stabiliza-

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1/ These measures are in addition to fugitive dust control requirements imposed under air quality regulations discussed below.

tion and revegetation work comparable to that designated for the tailing disposal area." As mentioned above, these requirements are subject to yearly review and may change should additional controls appear to be necessary.

B. Water Quality

Discharges to surface water from Kennecott Utah Copper facilities are subject to comprehensive regulation under an NPDES permit. However, EPA has recently approved the Utah NPDES program, and this should be noted in Table 4-2 of the Report to Congress.[1/]

The final Report should also explain that in Utah, discharges into groundwater from facilities managing smelter or refinery wastes are subject to comprehensive regulation under the Utah Water Pollution Control Act, Utah Code Ann. § 26-11-1 et seq. The Act applies to all "waters of the state," which is defined to include both surface and ground water (§ 26-11-2). The Act declares it unlawful to construct or operate a wastewater treatment facility and associated waste handling systems, or to allow any discharge from such operations, in violation of a permit (§ 26-11-8). Administration is provided by the state Water Pollution Control Committee and the Bureau of Water Pollution Control within the state Department of Health. The Committee and the Bureau are granted

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1/ See 52 Fed. Reg. 25758 (July 22, 1987).

all necessary authority to adopt water quality standards and other regulations governing permits and discharges, issue permits and enforce permitting and other discharge requirements. This includes authority to: (1) issue orders "prohibiting or abating discharges of wastes into the waters of the state;" (2) require construction of new control facilities, modification of existing facilities, or "adoption of other remedial measures to prevent, control and abate water pollution; " and (3) require any necessary groundwater monitoring and other recordkeeping or reporting activities (§§ 26-11-6.5(7); 26-11-14).

Pursuant to the state statute, Utah has adopted detailed regulations for wastewater disposal. The regulations cover all industrial wastes and prohibit any "discharge or deposit of wastes or other substances" not in conformance with the regulations (§§ 1.1.3, 1.2.1). All discharges must meet state water quality standards (§ 1.2.6). Permits are required for treatment and disposal facilities, and complete construction and operation plans must be submitted for approval (§ 1.2.2). Treatment facilities must meet all applicable effluent limits and must otherwise be operated "in a manner consistent with adequate protection of public health and welfare" (§ 1.2.7). Reuse of industrial wastewaters requires case-by-case consideration and approval by the Committee

(§ 1.5.1). No dumping of untreated sludge is permitted unless authorized by the Committee (§ 1.6.1).

Part III of the Utah regulations contains specific requirements for wastewater treatment works and associated waste handling facilities. Prior to construction of such facilities, complete plans and specifications, including a comprehensive engineer's report, must be submitted for Committee approval (§ III-1). The engineer's report must include detailed information on, among other things: (1) local geography; (2) topography; (3) census data; (4) volume and strength of flows; (5) volume and composition of discharges; (6) description of site and adjacent land; (7) waste ponds; (8) location of wells and other water sources within ½ mile; (9) results of surface and subsurface soil tests; (10) description of receiving waters; (11) description of basis for design; and (2) plans for continuous operation (§ III-2).

The Utah regulations also specify detailed requirements for sludge management. Specific regulations are provided for dewatering of sludge in tanks or drying beds (§§ III-69-76). Other types of sludge dewatering or disposal facilities are subject to case-by-case evaluation and approval (§ III-76). Special regulations are provided for waste stabilization ponds. Although they are designed primarily for domestic wastewater ponds, these regulations may also be applied to industrial

sludge ponds, along with any necessary additional requirements "determined from analysis of the engineer's report and other available pertinent information" (§ III-91). Ponds must be located "as far as possible" from human habitation, and placed so that prevailing winds blow away from inhabited areas (§ III-84). Special consideration is given to proximity of water supplies and other valuable resources:

> "Proximity of ponds to water supplies and other facilities subject to contamination should be critically evaluated to avoid creation of health hazards or other considerable conditions. The possibility of chemical pollution may merit special consideration. Areas of porous soil and fissured rock formation shall be avoided, unless sealed off to meet requirements of Section III-88" (id., emphasis added).

The referenced section III-88 governs protection of pond bottoms to avoid excessive seepage, and imposes the following requirements:

> "[T]he soil formation or structure of the bottom should be relatively tight to avoid excessive liquid loss due to seepage. Soil borings and tests to determine the characteristics of surface soil and subsurface soil shall be made a part of preliminary surveys to select pond sites. Gravel and limestone areas shall be avoided unless effective and permanent sealing is accomplished. Removal of the porous topsoil and proper compaction of subsoil improve the water-holding characteristics of the bottom. Removal of porous areas, as gravel or sandy pockets, and replacement with well-compacted clay or other suitable material may be indicated.

> Where seepage is determined to be in excess of ¼" per day, sealing of the bottom with clay, bentonite, asphalt coating or other sealing material should be given consideration. In areas where ground water is a source of water supply sealing of ponds will be required" (emphasis added).

Since the early 1980's, the Bureau has used these and other regulations to require most ponds at mining operations to be lined with a low permeability material such as clay or a synthetic liner, and to conduct groundwater monitoring.[1/] The Bureau determines the need for these measures on a site-specific basis.

Other regulated aspects of impoundment ponds include embankments, overflow capacity and general safety. Ponds must be of sufficient capacity to contain massive amounts of winter precipitation common in Utah, and must have spillways for emergencies (§ III-86). Embankments must be constructed with impervious materials and must maintain proper slopes. Erosion control measures are required, and a minimum freeboard of 3 feet must be maintained (§ III-87). Ponds must be enclosed with fences and warning signs must be posted as appropriate (§ III-84).

1/ Utah Department of Health, Ground Water Protection Strategy for the State of Utah, p. 78 (June 1986).

Finally, the Utah regulations recognize that "since pond operation is influenced by somewhat uncontrollable and relatively unpredictable natural phenomena such as temperature, cloud cover, precipitation, soil permeability, etc., adequate factors of safety should be provided in the design . . . The uncertainties involved in predictions of effluent quality may result in a need for construction of additional ponds or other modifications of design after facilities are placed in operation" (§ III-83). Thus, design and operating requirements in pond permits may be modified periodically as necessary.

C. Air Quality.

The ICF draft Report notes that many states have set air quality performance standards for primary copper smelters, but neglects to mention Utah in this regard (p. 4-37). Sections 3.2 and 4.3 of the Utah Air Conservation Regulations contain detailed provisions limiting smelter emissions of sulfur dioxide and particulate matter, including both stack and fugitive emissions. Emissions not covered by these provisions are subject to opacity requirements under Section 4.1 of the Utah regulations. The Utah Air Conservation Act provides complete authority for enforcement of these requirements and for emergency enforcement measures (§ 26-13-9).

The draft Report also omits discussion of state regulations restricting emissions of fugitive dust from mining and related operations. Section 4.5.4 of the Utah regulations

states that mining operations "shall minimize fugitive dust as an integral part of site preparation, mining activities and reclamation operations." Control measures that may be imposed include, but are not limited to, the following:

(1) periodic watering of unpaved roads;
(2) chemical stabilization of unpaved roads;
(3) paving of roads;
(4) frequent scraping and compaction of roads;
(5) restrictions on vehicle speed and other activity;
(6) revegetation or other stabilization of dusty areas;
(7) enclosing, watering or treating loaded haul trucks or railroad cars;
(8) use of closed conveyor systems;
(9) watering or other control of drilling dust;
(10) blasting restrictions;
(11) enclosure, stabilization or other control of storage piles and transfer and loading points.

Tailings piles and ponds are subject to special requirements under the Utah regulations. Operators "shall take steps to minimize fugitive dust" from such activities as "grading, excavating, depositing, or natural erosion or other causes" (§ 4.5.5). Required controls may include, but are not limited to:

(1) watering and/or chemical stabilization;
(2) synthetic and/or vegetative covers;
(3) wind breaks;
(4) minimizing areas of disturbance;
(5) vehicle restrictions.

Pursuant to these requirements, the Kennecott Utah Copper tailings pond is subject to a comprehensive dust control plan

which is periodically reviewed by state authorities and revised if necessary.[1/] The plan requires the company to employ the following measures, among others, to control emissions of fugitive dust from the tailings pond:

(1) The company must maintain a comprehensive tailings and fresh water distribution system and operate it to maximize surface wetness. No more than 5% of the pond area may remain dry without vegetation or other means of stabilization.

(2) At least 24 hours prior to predicted "wind events" (wind speed above 40 mph for 1 hour), wet tailings must be placed on dry areas most susceptible to wind erosion.

(3) Pond areas not subject to tailings distribution must be stabilized through vegetation or other approved measures.

(4) Perimeter roads must be treated with magnesium chloride at least once a year, and more often if necessary to minimize windblown dust. Additional measures, such as use of water sprays, may also be required.

(5) The pond must be inspected weekly and whenever wind gusts above 20 mph are predicted to occur for at least an hour.

(6) The company must watch daily forecasts, and must alert state officials and perform additional monitoring if high winds are expected. Quarterly reports to state officials on tailings controls are also required.

1/ See Letter from F. Burnell Cordner, Executive Secretary, Utah Air Conservation Committee to Gregory H. Boyce (June 23, 1987).

(7) Whenever Kennecott or the state determines that additional controls are necessary, they must meet to discuss controls and compliance schedules within five working days.

D. Solid Waste.

The ICF draft Report recognizes that mining and mineral processing wastes are subject to solid waste regulations in "virtually every state" (p. 4-33). However, the discussion of these regulations in the draft focuses almost entirely on "the variability and inconsistency in management and enforcement of state solid waste regulations" (p. 4-34), implying that these requirements may not provide adequate regulation of mineral and processing wastes.

This emphasis ignores the fact that in many states, authority to regulate solid wastes merely complements more specific authority under other statutes to regulate all important aspects of facilities handling mining and mineral processing wastes. That is certainly the case in Utah. As demonstrated above, other state statutes and regulations require comprehensive regulation of such facilities with respect to: (1) construction and operation; (2) emissions to air; (3) discharges to surface and ground water; (4) closure and post-closure; (5) financial responsibility; and (6) enforcement. As explained below, the state retains authority

to subject such facilities to hazardous waste regulation if necessary. Accordingly, detailed coverage of these requirements in solid waste regulations would be duplicative and unnecessary.

Nevertheless, the Utah Solid and Hazardous Waste Act grants the state Solid and Hazardous Waste Committee comprehensive authority for regulation of solid waste disposal. The Committee may adopt rules "establishing minimum standards for the protection of public health, for the storage, collection, transport, recovery, treatment and disposal of solid waste, including approval of plans for the construction, extension and operation of solid waste disposal sites" (§ 26-14-6(a)(1)). The Committee also has extensive investigative and enforcement powers, including authority to "issue corrective action orders on a case-by-case basis, as necessary to carry out the purposes" of the statute (§§ 26-14-9, 26-14-11). Mining and mineral processing wastes currently are exempt from Utah solid waste regulations, but only "provided that such waste does not cause a public nuisance or public health hazard or is otherwise determined to be a hazardous waste" (§ 26-14-6(a)(1)). Accordingly, smelter and refinery wastes may be subjected to solid waste requirements if necessary.

Pursuant to the Utah Act, the state Committee has adopted solid waste regulations that apply to municipal waste facilities and other types of facilities that might "fall between

the cracks" of the more specific regulatory programs described above. The Utah regulations define "solid waste" to include all material discarded from industrial operations. "Indiscriminate dumping" is prohibited through a declaration that it is unlawful to "deposit any solid waste in any place" except a site properly designated by local authorities and approved by the State Department of Health. No solid waste management facility can be constructed or operated without the Department's approval. Detailed plans must be submitted prior to construction, including a description of local geology and groundwater. Approval will "depend, in part, on adequate isolation, avoidance of excessively irregular topography, groundwater elevations, extremely pervious soil formations, surface rock formations and outcroppings, and close proximity to natural drainage channels." Operating conditions must include requirements for necessary equipment, personnel, dust control, record-keeping, special treatment of hazardous waste and such other conditions as the Department deems appropriate.

E. Hazardous Waste.

The draft Report notes that most states have adopted the federal mining waste exclusion and lists seven states in which mining and processing wastes may be subject to some form of hazardous waste regulation. Utah should be added to

the latter list. The Utah Solid and Hazardous Waste Act, Utah Code Ann. § 26-41-1 et seq., grants the state Solid and Hazardous Waste Committee all of the pertinent authorities granted to EPA under federal law. Pursuant to these authorities, the state has adopted comprehensive Hazardous Waste Management Regulations nearly identical to EPA's subtitle C regulations.1/

Wastes covered by the federal mining waste exclusion currently are exempt from the Utah hazardous waste regulations (§ 21.3(b)(7)). However, such wastes are not exempt from regulation as hazardous waste under the state statute. The statute exempts mining and mineral processing wastes only "provided that such waste does not cause a public nuisance or public health hazard or is otherwise determined to be a hazardous waste" (§ 26-14-6(a)(1)). Similarly, the statute generally prohibits state regulations more stringent than their federal counterparts, but not where the Committee determines that federal regulations are "not adequate to protect public health and the environment of the state"

1/ The Utah regulations are administered by the Bureau of Solid Waste Management within the state Department of Health. The Utah regulations have not yet been approved by EPA, but the state statute requires the Committee to ensure that federal law is satisfied and that the state program is "qualified to assume primacy from the federal government in control over hazardous waste" (§ 26-14-5).

(§26-14-5.5). Accordingly, while smelting and refining wastes currently are exempt from the Utah hazardous waste regulations, the state retains statutory authority to subject them to any or all of the hazardous waste regulations at any time they are found to present any significant public health or environmental threat.

IV. DEFERENCE TO EXISTING REGULATORY REQUIREMENTS

The primary purpose of the Report to Congress is to provide a basis for EPA to decide whether current regulation of mineral processing waste is adequate, or whether additional subtitle C regulation is warranted. Yet the ICF draft Report fails to mention two of the most important limitations on EPA's authority to make this decision: the requirements that the agency must make every effort in its RCRA regulations to avoid duplication of existing requirements already imposed under other federal laws, and must defer to existing state regulations when possible. With respect to other federal laws, this requirement is clearly stated in RCRA Section 1006:

> "(a) Application of Chapter
>
> Nothing in this chapter shall be construed to apply to (or to authorize any state, interstate or local authority to regulate) any activity or substance which is subject to the Federal Water Pollution

> Control Act, the Safe Drinking Water Act, the Marine Protection, Research and Sanctuaries Act of 1972 or the Atomic Energy Act of 1954, except to the extent that such application (or regulation) is not inconsistent with the requirements of such Acts.
>
> (b) Integration with other Acts
>
> The Administrator shall integrate all provisions of this chapter for purposes of administration and enforcement and shall avoid duplication, to the maximum extent practicable, with the appropriate provisions of the Clean Air Act, the Federal Water Pollution Control Act, the Federal Insecticide, Fungicide and Rodenticide Act, the Safe Drinking Water Act, the Marine Protection and Sanctuaries Act of 1972 and such other Acts of Congress as grant regulatory authority to the Administrator" (citations omitted).

EPA's duty to defer to state regulatory authorities appears in the following provisions of Executive Order 12612, 52 Fed. Reg. 41686 (October 30, 1987):

> (c) With respect to national policies administered by the states, the national government should grant the states the maximum administrative discretion possible. Intrusive federal oversight of state administration is neither necessary nor desirable.
>
> (d) When undertaking to formulate and implement policies that have federalism implications, Executive departments and agencies shall . . . (2) refrain, to the maximum extent possible, from establishing uniform national standards for programs and, when possible, defer to the states to establish the standards."

These requirements certainly are consistent with RCRA. Section 1002(a)(4) expressly states that "the collection and disposal of solid wastes should continue to be primarily the function of state, regional and local agencies . . ." See Philadelphia v. New Jersey, 437 U.S. 617, 620 n. 4 (1978). Section 1003(a)(7) announces a primary RCRA objective of "establishing a viable federal-state partnership" to administer and enforce RCRA in general and subtitle C in particular.

Although these requirements are likely to play a pivotal role in EPA's regulatory determination for processing wastes, they are not discussed in the draft Report. The final Report should present EPA's interpretation of these requirements and explain how the agency intends to comply with them in deciding whether to regulate processing waste under RCRA subtitle C.

CONCLUSION

The discussion of applicable Federal and state regulations in Chapter IV of the draft Report to Congress on mineral processing wastes is severely deficient. As a result, the draft Report creates the misleading impression that there are substantial gaps in current regulation of copper smelting and refining wastes, and that subjection of these wastes to full subtitle C regulation would not impose substantial compliance problems. The ICF draft should be revised to present a thorough discussion of the existing

federal and state laws and regulations summarized above, and to explain how EPA intends to implement its charge to avoid duplication of existing federal requirements and to defer to existing state regulation when possible.